An epidemiological study for seroprevalence of transfusion transmissible infections among blood donors in Faisalabad, Pakistan

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**Objective:** To estimate the prevalence of transfusion transmissible infections in Faisalabad, Pakistan.

**Methodology:** All the voluntary, non-paid and apparently healthy persons in the year 2017, coming to blood bank were screened for Hepatitis B, Hepatitis C virus, HIV, Syphilis and malarial parasite by Immune chromatography technique (ICT). Prevalence was calculated.

**Results:** A total 29,167 donors were screened; out of these 2,034 (6.97%) were positive for hepatitis C, 590 (2.02%) were affected by HBV, four (0.01%) were positive for HIV, 708 (2.43%) were positive for syphilis and only 32 (0.01%) were positive for malarial parasite.

**Conclusion:** Rate of transfusion transmissible infections in Faisalabad was very high such as Hepatitis B, C and Syphilis. While HIV and malarial parasite prevalence was low. (Rawal Med J 202;45:531-533).

**Keywords:** Syphilis, transfusion, transmissible Infections.

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**INTRODUCTION**

Transfusion of blood is an important method for life-saving. However, this procedure is fraught with demerits and complications, as it causes Transfusion Transmissible Infections (TTIs) like Hepatitis B, C, HIV, syphilis and malaria. In every year, globally >81 million units blood is donated and out of this >18 million pints blood is not tested or screened for such blood born infection. According to World Health Organization (WHO), in 2006 more than 75% of the blood donations were received from different families of patient but other 25% were received from the professional blood donors on payment.

At present, about 170 blood banks are registered and are working in public sector while about 450 blood banks are working on small scale in private sector. In Pakistan, there is also a great need of biosafety practices in clinical laboratories and in the blood banks. This study aimed to estimate the prevalence of TTIs in Faisalabad.

**METHODOLOGY**

This retrospective descriptive study included voluntary (non-paid) donors who came in the blood bank of DHQ Hospital, Faisalabad in the year of 2017 (1st January to 31st December). A total 29,167 donors were screened for Hepatitis B virus (HBV), Hepatitis C virus (HCV), Human immune deficient virus (HIV), syphilis and malarial parasite. The screening of was done by a rapid method Immune Chromatography Technique (ICT).

Apparently healthy donors (males and females) of age 28±9.5 years were included in this study. The general method of detecting HIV was to observe the presence of antibodies to the virus by an EIA (Enzyme Immuno Assay) method followed by confirmation with Western Blot. The test is based on Immuno Chromatography and can give a result within 15 minutes. The test device of CTK Biotech was used for the detection of Syphilis. The ethical approval for study was taken from GC University, Faisalabad.

**Statistical Analysis:** Data were analyzed with SPSS version 21. Descriptive statistics was determined in the form of percentage.

**RESULTS**

The total number of blood donors was 29,167 who were screened for all kinds of the TTIs or the blood infections in the blood bank of DHQ Hospital, Faisalabad in the year of 2017. The annual donors'
details in 2017 of DHQ hospital Faisalabad. Out of the total screened donors, 3368 (11.55%) were found affected by the TTIs. Among the total donors, 2034 (6.97%) were HCV positive, 590 (2.02%) were HBV positive, 708 (2.43%) were syphilis affected, 32 (0.11%) were malaria parasite positive and only 4 (0.01%) showed HIV seropositivity. Both genders (male & female) included in this study showed seropositivity for TTIs. If we consider a specific area for HCV positive donors, the area around the Jaranwala city has more affected people.

DISCUSSION

Globally, Pakistan is one of the nine priority countries funded by other countries for different controlled programs and for the blood transfusion services to control different TTIs. In different cities of Pakistan specially in Faisalabad, there is no proper awareness about the different infectious diseases, spread of diseases, and control of diseases. In India, a study on 100,000 blood donations showed that 350 (0.35%) persons were positive for Hepatitis C, 1660 (1.66%) were positive for Hepatitis B Virus, 800 (0.8%) were positive for syphilis, while only 350 (0.35%) were positive for HIV.

In Iran, the blood transmissible infections were 0.487% for HBV, 0.093% were positive for HCV, 0.003% were for HIV, and for syphilis 0.005% were infected persons. The prevalence rate in our study are higher as compared with these studies. Whereas in Ethiopia, the prevalence rates of TTIs are higher than of our results (HBV 8.2%, HCV 5.8%, and the HIV positive cases 4.5%).

In the US, the prevalence of the TTIs noted in a similar study from 1991 to 1996 were very low due to awareness of diseases among the people and good environmental conditions. The previous studies showed that the prevalence of HCV in Pakistan varied from 0.27% to 6.8%. Highest affected cases were reported in the Karachi (6.8%) and in Rawalpindi (6.21%). But our study shows the highest prevalence of HCV (6.97%), in Faisalabad as compared to all other studies.

The seroprevalence of HBV in Pakistan varies from 1.55% to 7.53% among the blood donors. The highest HBV prevalence was reported from Bahawalpur (7.53%). Globally, the highest prevalence of HBV was reported in Egypt (4.3%), in Georgia (3.4%) and in Saudi Arabia (1.5%). While our study showed (2.02%) prevalence of HBV in Faisalabad. At the same time the prevalence of HCV was 2.7% in Egypt, 6.9% was in Georgia and 0.4% was in the Saudi Arabia.

The results of other studies related to syphilis showed the lowest prevalence in Pakistan. Our study showed the high prevalence of syphilis in apparently healthy blood donors. Every blood donor in Faisalabad should be screened for the TTIs by Polymerase chain reaction (PCR) or at least Enzyme Linked Immune Sorbent Assay (ELISA) should be done to diagnose these infections. The Government of Pakistan should start different health related awareness programs to control the spread of such serious infections.

CONCLUSION

Rate of transfusion transmissible infections in Faisalabad was very high such as Hepatitis B, C and Syphilis. While HIV and malarial parasite prevalence is low as compared to the other TTIs.

REFERENCES

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